



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,745	11/14/2001	Gerald Chip	GT-5400	8255

7590

09/10/2003

Omnova Solutions Inc.  
Robert F. Rywalski  
175 Ghent Road  
Fairlawn, OH 44333-3300

EXAMINER

BOYD, JENNIFER A

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 09/10/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n No.

09/993,745

Applicant(s)

CHIP ET AL.

Examiner

Jennifer A Boyd

Art Unit

1771

-- Th MAILING DATE of this communication app ars on th cover sh t with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 November 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1 - 10 in Paper No. 4 is acknowledged.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Connor et al. (US 4,539,254).

O'Connor is directed to a reinforcing composite for roofing membranes and process for making such composites (Title).

As to claims 1 and 6, O'Connor teaches a composite comprising at least one layer of fiberglass, at least one layer of polyester and at least one third layer which is fiberglass or polyester (column 1, lines 59 – 64). O'Connor teaches that the layers may be bonded together by a thermoplastic adhesive under pressure to form a single, thin composite (column 2, lines 10 – 14). O'Connor teaches that the thermoplastic adhesive used to bind the laminated composite together can be a water-based adhesive capable of cross-linking (implying the need of a cross-linking material) to give a thermoset structure, may also be made by adding thermosetting resins to a thermoplastic resin (for example, by adding a urea-formaldehyde resin to a styrene-butadiene latex) (column 3, lines 55 – 68). It should be noted that the preparation of the urea-

Art Unit: 1771

formaldehyde resin by adding a "short-stop agent" is not given any patentable weight. Since the Applicant has not given any chain length limitations to the polymer, it is unclear how the short-stop agent would materially affect the product and differentiate it from any other urea-formaldehyde resin.

As to claims 1 – 10, O'Connor discloses the claimed invention except for that the binder comprises at least 10 – 90 wt% styrene-butadiene and a corresponding amount of 90 – 10 wt% of urea-formaldehyde resin as required by claims 1 and 6, about 70 wt% styrene-butadiene and about 30 wt% of urea-formaldehyde resin as required by claims 2 and 7, at least 10 – 90 wt% styrene and 90 – 10 wt% butadiene as required by claims 3 and 8, about 30 - 70 wt% styrene and about 70 – 30 wt% of styrene as required by claims 4 and 9 and about 40 wt% styrene and about 60 wt% of styrene as required by claims 5 and 10. It should be noted that the amount of styrene-butadiene and urea-formaldehyde resin present in the binder and the proportion of butadiene to styrene are result effective variables. For example, as the styrene content increases, the binder becomes stiffer and is more impact resistant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to create a binder with 10 – 90 wt% styrene-butadiene and a corresponding amount of 90 – 10 wt% of urea-formaldehyde resin as required by claims 1 and 6, about 70 wt% styrene-butadiene and about 30 wt% of urea-formaldehyde resin as required by claims 2 and 7, at least 10 – 90 wt% styrene and 90 – 10 wt% butadiene as required by claims 3 and 8, about 30 - 70 wt% styrene and about 70 – 30 wt% of styrene as required by claims 4 and 9 and about 40 wt% styrene and about 60 wt% of styrene as required by claims 5 and 10 since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Art Unit: 1771

In the present invention, one would have been motivated to optimize the ratio of styrene-butadiene and urea-formaldehyde and the ratio of styrene to butadiene to create a binder with proper tear strength and impact strength.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Wertz et al.* (US 2002/0117279 A1) teaches the use of styrene-latex modified, urea-formaldehyde resin composite for binder for glass mats but fails to teach for the use of polyester mats.

*Chang et al.* (US 6,084,021) teaches the use of styrene-latex modified, urea-formaldehyde resin composite for binder for glass mats but fails to teach for the use of polyester mats.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A Boyd whose telephone number is 703-305-7082. The examiner can normally be reached on Monday thru Friday (8:30am - 6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the

Art Unit: 1771

organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Jennifer Boyd  
September 2, 2003

